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Results: Severe hypovitaminosis D (< 12.5 nmol/l) was noted in 10.6% of the subjects. Boys had significantly higher cases of severe-moderate hypovitaminosis D as opposed to girls ($p = 0.014$). 25-hydroxyvitamin was inversely correlated to age, BMI, systolic and diastolic blood pressure, waist, hips and waist-hip ratio and triglycerides (p-values 0.0002, 0.0004, 0.003, 0.0004, 0.0008, 0.0002, 0.002 and 0.003, respectively). Age and systolic blood pressure were the significant predictors for 25-hydroxyvitamin D, explaining 31% of the variance perceived ($p = 0.0005$).

Conclusion: Significant inverse associations of serum 25-hydroxyvitamin D to cardiometabolic parameters present promising cardioprotective benefits of vitamin D status correction at an early age either by supplementation or lifestyle modification. Follow up studies are needed to validate findings.

Tracks: Pediatric Cardiology.

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SHA 33. Fetal tachyarrhythmia: Guidelines for management

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Objectives/introduction: Abnormalities of fetal heart rhythm account for about 10% of referrals to the fetal cardiologist. Sustained fetal tachyarrhythmia is considered to be of clinical significance as it may indicate severe systemic disease or may have the potential to compromise fetal circulation. For such abnormalities prenatal diagnosis and management could be critical and could ultimately improve the outcome. Treatment of fetal tachyarrhythmia is currently practiced in a few cardiac centers in our country with great variation in treatment. It is well known that worldwide there is still no consensus regarding fetal tachyarrhythmia treatment.

Objective: To implement Guidance Protocols for all pediatric cardiologists who undertake fetal echocardiography and who still have limited experience in fetal tachyarrhythmia treatment.

Methods: A prospective multi-institutional study in which pregnant women anywhere in the Kingdom suspected of having fetal tachyarrhythmia (SVT, AF, VT, fetal heart rate more than 180 BPM) will be enrolled in the study. Enrolment will be achieved either: by referring the patient to the participating center or; by submitting the patient's data to the primary investigator and following the abovementioned Guidance Protocol.

Results: To improve our knowledge of the electromechanical properties of the fetal heart as well as the mechanisms of arrhythmia.

Conclusion: To further improve outcomes.

Tracks: Pediatric Cardiology.

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SHA 34. Compare the effect of mesenchymal stem cells (MSCs) and endothelial cells (ECs), on cardiac function and angiogenesis in acute myocardial infarction (MI) induced in sheep animal model

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Dr. Abbasali Karimi, Head of Tehran Heart Center [a],
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Objectives: Nowadays induction of angiogenesis has adopted for treatment of diffuse coronary artery disease that may not respond to conventional revascularization methods such as PTCA and CABG. In this study after intramyocardial injection of MSCs and ECs, we compared angiogenesis and cardiac function in a large animal ischemic heart model.

Methods: Acute MI was induced in 18 sheep (12 studies and six controls) by ligating the second diagonal branch of the LAD. After ligation, autologus MSCs and ECs (derived and cultured from saphenous vein), were injected in the infarcted area and border zone. Cardiac function was evaluated before, 1 day and 2 months after operation using echocardiography. After 2 months all animals were sacrificed. Immunohistochemistry (IHC) studies were performed.

Results: Echocardiography in MSCs and ECs groups showed significant increase in ejection–fraction (EF) in compare with control group. (P-value: 0.0004 for MSCs, 0.0029 for ECs). Two study groups showed significant increase in vascular density both with Smooth Muscle Actin (SMA) antibody (P-value: 0.0192 for MSCs 0.0057 for ECs) and Von Willebrand factor (vWF) (P-value: 0.0012 for MSCs 0.0004 for ECs). The pattern of vascularity in MSCs and ECs groups were diffused.

Conclusion: It seems that both MSCs and ECs can promote angiogenesis and improve cardiac function. Presumably, MSCs are differentiated to endothelial cells and make angiogenesis as it occurs for ECs. Further studies should be done for long term follow up to evaluate the effectiveness of ECs for improving cardiac function in compare with MSCs.

Tracks: Cardiovascular Surgery.

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SHA 35. The relationship between self-concept cognitive perception and adherence to medication regimen in Iranian heart failure patients

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Objectives: Heart failure (HF) is one of the many chronic conditions that require patients to adhere to a lifelong therapeutic regimen to achieve optimal outcomes. Medication adherence in heart failure (HF) is a crucial but poorly understood phenomenon. The purpose of this study is survey the relations between cognitive perception of self concept according to Roy's self-concept mode theory and adherence to treatment regimen in heart failure patients.

Methods: About 108 heart failure patients from two academic health care centers in a correlation Descriptive design with three scales were examined. The Cronbach's alpha coefficient after pilot study for cognitive perception of self concept questionnaire (Tomas, 2004) and medication adherence. Questionnaire were calculated. The content validity of these scales was checked.

Results: Challenge to self concept had a direct and positive relationship with adherence to medication regimen ($r = .38$) ($p = .000$). Threat to self concept had a negative and inverse rela-

tionship with adherence to medication regimen ($p = .009$). Regression analysis showed that more challenge and less threat to self concept and its components (body sensation, body image, self-consistency, self ideal, moral–ethical–spiritual self) was associated with increase in adherence of medication regimen.

Conclusion: Nurses need to identify methods that patients perceive heart failure in way that are less threatening and work to empower patients to face heart failure as a challenge. Therefore it may increase adherence to medication regimen in this patients.

Tracks: Cardiac Nursing.

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SHA 36. Nursing staff development: Strategies for success in a unique critical care unit

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Objectives: Creation of innovative retention strategies is a major focus for nursing administration as a shortage of nurses recurs and turnover of staff becomes a problem. Retention strategies, to be effective, need to be targeted specifically to particular conditions of the nursing staff. The Cardiac Surgical Intensive Care Unit (CSICU) at the King Faisal Specialist Hospital and Research Center is a unique Unit where it combines adult, pediatric and neonatal cardiac surgical patients. This demands well trained and skilled nurses to be able to look after this complex variety of patients. The big majority of nurses recruited to CSICU have adult educational background only. Therefore the Department of Nursing Development and Saudization together with Cardiovascular Nursing Department developed and implemented different education strategies to improve nurse's skills and competencies according to the unit's needs.

Methods: The strategies implemented included: comprehensive and periodic assessment of nurses, regular inservices in the form of lectures, skills review sessions, progressive orientation program divided in different phases, bedside teaching, provision of a wide educational references, and professional development workshops.

Results: In a survey done in 2006, for a database of 64 nurses, 18 (28%) had only adult experience. About 14/18 (78%) were unable to progress to pediatric care phase (PCP). Another survey in 2007 and for a database of 68 nurses, it showed that 15 (22%) had only adult experience. About 8/15 (53%) could not progress to PCP. A third survey performed in 2008, for a database of 82 nurses, 25 (30%) had adult experience, 6/25 (24%) were not able to progress to PCP.

Conclusion: Implementing comprehensive education strategies targeting different approach of training contributed to a considerable progressive staff development and retention in CSICU.

Tracks: Cardiac Nursing.

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SHA 37. "Moving into a technological era" electronic patient care documentation in adult cardiac surgical ICU

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Objectives: A new era in Saudi Healthcare has dawned with the integration of an electronic patient charting system, Intellivue Clinical Information Portfolio (ICIP). This nursing documentation application in the health care setting has the potential to transform the delivery of care, by streamlining processes, making procedures more accurate and efficient, and reducing the risk of human error, but only if the staff nurse is empowered and properly supported within the organization.

Methods: Having been implemented 2 years ago in the Cardiac and Liver Centre, National Guard, Riyadh, the organization has experienced rapid change and development. While early evaluation of this system shows positive outcome measurements, the technical, and organizational hurdles to widespread implementation still remain. During this process the impact on patient care can be reflected through the eyes of the end user, the staff nurse and their delivery of patient care utilizing ICIP as an extension of that care.

Results: A major issue facing a healthcare organization taking the step towards a technological age by implementation of ICIP is re-defining the traditional roles of the end users, in this case the staff nurses. This is accomplished by adequate and appropriate staff training, 24/7 technical support staff involvement and auditing.

Conclusion: While it is gratifying to see that nursing practice is the driving force into this leading-edge field, it is even more rewarding to see staff nurses move beyond the concepts of simple computing into the bigger picture, understanding how clinical decisions are made and their impact on patient outcomes.

Tracks: Cardiac Nursing.

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SHA 38. A systems biology approach to rheumatic heart disease

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Scientific Officer [b], Saeeda Munieer, Scientific Officer [b]
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